

Intel® Vision Products use Deep Learning to Transform the Surveillance Landscape

Intel's robust portfolio of vision products helps boost the performance of Genetec's cutting-edge visual data monitoring and analytics software

Intelligent analytics' challenges are driving demand for solutions that can actualize visual data in new ways

Businesses and organizations from all vertical sectors are looking to leverage intelligent vision capabilities, such as deep learning, to **solve their security, safety, and operational challenges.**

In key markets, such as public transportation and smart retail, the need to extract useful vision-based insights is becoming more critical as **patrons expect seamless, personalized, and digitally-integrated experiences.** At the same time, decision-makers such as transportation officials authorities and retail operations managers may be frustrated by the **high barrier to entry for new visual security and surveillance hardware and software.** To address these challenges, along with an array of others, these organizations require a solution that:

- **Enables responsive, real-time visual analytics** by driving compute at the edge
- **Integrates and optimizes deep learning** without requiring disruptive, high-expenditure hardware replacement

Only Intel can deliver the most comprehensive array of intelligent vision capabilities to the wider market

The Intel® Vision Products portfolio is comprised of silicon, software tools, deep learning frameworks, and libraries that are uniquely positioned for the next generation of AI. Intel® Vision Products are helping put your data to work, from the edge to the cloud, so you can act in real time, make decisions faster, and implement new operational strategies to drive immediate results.

At the hardware level, Intel boasts the most comprehensive selection of acceleration silicon in the industry. **Intel® CPUs, CPUs with integrated graphics, and Intel® Vision Accelerator Design Products based on Intel® Movidius™ VPUs and Intel® FPGAs** help deliver highly accurate vision analytics performance and compute efficiency.

Intel also offers an array of software tools, including the **Intel® Distribution of Open Visual Inference and Neural Network Optimization (OpenVINO™) toolkit**, for accelerating the development and integration of intelligent vision solutions and capabilities at scale. This end-to-end suite helps integrate vision capabilities across your entire end-to-end infrastructure.

“[Intel® Distribution of] OpenVINO™ toolkit enabled us to run our deep learning algorithms on Intel CPUs & GPUs already readily available to our customers, broadening our market reach and simplifying project scoping.”

— Georges Tannous, Strategic Alliances Director for Genetec

\$17B+

Computer vision overall market by 2023¹

\$328B+

IoT transportation global market by 2023²

79%

Retailers will invest in vision analytics by 2021³

Genetec delivers market-leading visual surveillance solutions to better understand businesses and protect the everyday

Genetec is an industry leader in Internet Protocol (IP)-based security, delivering resilient and connected solutions that help businesses and organizations protect, understand, and enhance community and customer experiences. Their cutting-edge vision analytics, management, and monitoring technologies provide a platform that facilitates communication and collaboration to improve public safety, and ultimately improve the quality of life.

Genetec offerings go beyond physical security, providing solutions across applications like surveillance, access control, visitor counting, and automatic license plate recognition to turn data into insights.

Advanced deep learning analytics are bringing Genetec solutions to new levels of intelligence—currently available with Retail Sense* and soon to be available with Retail Appliance Bundles such as StreamVault*. For example, with Retail Sense*, retailers can use existing security infrastructure and core modules—such as visitor counting—to collect, decode, and reveal data intelligence on a single pane of glass.

The Intel® Distribution of OpenVINO™ toolkit makes project scoping and deployment easier for Genetec customers

Using this toolkit, Genetec can run their deep learning algorithms on a range of hardware platforms readily available to customers, including Intel® CPUs (and CPUs with integrated graphics), which enables any Intel hardware to be utilized with Genetec StreamVault* instead of the specific hardware usually required. Intel CPU-based hardware is optimized to drive data processing at the edge, allowing for more analytics insights to be delivered in real time.

By bringing deep learning to a variety of hardware platforms, **the toolkit is helping Genetec increase the accuracy of their analytics**—specifically with regards to visitor counting. In addition, the improved accuracy enables Genetec to overcome some common environmental issues that are typically present in traditional video analytics, including dealing with sunlight and shadows.



The Intel® Distribution of OpenVINO™ toolkit is the centerpiece of computer vision solutions

The Intel® Distribution of OpenVINO™ toolkit is a free, downloadable toolkit within the Intel® Vision Products portfolio that fast-tracks the development of high-performance computer vision and deep learning inference into vision applications. Optimized for multiple Intel® Architectures, the toolkit works with CPUs, CPUs with integrated graphics, Intel® FPGAs, and Intel® Movidius™ VPUs.

By leveraging the toolkit, users can accelerate computer vision performance, shorten vision solution development, and streamline deep learning inference and deployment.



The Intel® Distribution of OpenVINO™ toolkit is helping helping Genetec deliver better detection and counting video intelligence across industries



Transportation: Genetec Traffic Sense*

Genetec Traffic Sense* can improve transportation safety, efficiency, and experiences by unifying security devices, traffic systems, and incident response in a single solution. The Genetec Traffic Sense platform delivers scalable deep learning to transportation security infrastructures, helping to automate actions, visualize data, and act quickly.

Genetec Traffic Sense features platforms like **Genetec Mission Control***, which automatically collects, qualifies, and assesses data from security devices, and then provides guided situational intelligence to improve operator responses to incidents. Genetec Traffic Sense solutions make it easier to monitor transportation spaces—like terminals, parking lots, traffic lanes, checkpoints and more—using real-time video streaming and optimized incident response.

The Intel® Distribution of OpenVINO™ toolkit enabled Genetec to run deep learning algorithms on existing Intel hardware, helping customers maximize their existing Intel-based security deployments. Deep learning helps customers create seamless journeys by helping them understand vehicle movement, reduce congestion, and improve traffic flow.

Retail: Genetec Retail Sense*

Genetec Retail Sense* helps increase in-store profitability by activating data collected from customers' existing security DSS networks.

Genetec Retail Sense uses Genetec's advanced retail analytics to anonymously identify, count, and correlate shopper movement throughout the store.

The resulting insights help retailers drive traffic by maximizing marketing promotions and store layout based on foot traffic patterns, and optimizing in-store exposure by identifying high-traffic locations. Retail Sense can even unlock long-term insights that can improve inventory forecasting accuracy, translating to positive and impactful business operations decisions for retailers.

The Intel® Distribution of OpenVINO™ toolkit helped Genetec overcome machine learning environmental challenges to improve accuracy for customers. This enhanced Retail Sense algorithm is also available on **StreamVault's Retail Application Bundles***, helping to drive a truly end-to-end visual analytics experience.

Intel® Vision Products and the Intel® Distribution of OpenVINO™ toolkit can improve the performance and cost-effectiveness of surveillance solutions from providers such as Genetec. As a result, **end-users can improve vision analytics and uncover more valuable insights.**

For more information on the relevant Intel and Genetec products, visit:

- [Intel® Vision Products Applications for IoT](#)
- [Genetec Solutions for Transportation and Traffic](#)
- [Genetec Solutions for Retail](#)

To learn about the Intel® Distribution of OpenVINO™ toolkit, go to:

- [Intel® Distribution of OpenVINO™ Toolkit Homepage](#) (an [open source](#) version is also available)
- [Intel® Distribution of OpenVINO™ Toolkit Customer Testimonials](#)



1. Marketsandmarkets, [Computer Vision Market](#), 2017
2. Zebra, [Reinventing Retail Study](#), 2017
3. Allied Market Research, [IoT in Transportation Market Overview](#), 2017

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